

# **EXHIBIT**

# **A**

UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

CORDIS CORPORATION and ) C.A. No.  
EXPANDABLE GRAFTS PARTNERSHIP, ) 97-550-SLR  
Plaintiff(s), ) (consolidated)

vs. )

ADVANCED CARDIOVASCULAR )  
SYSTEMS, INC., GUIDANT )  
CORPORATION, ARTERIAL VASCULAR )  
ENGINEERING, INC., BOSTON )  
SCIENTIFIC CORPORATION and )  
SCIMED LIFE SYSTEMS, INC., )  
Defendant(s). )

**COPY**

----- )  
BOSTON SCIENTIFIC CORPORATION, ) C.A. No.  
Plaintiff(s), ) 98-19-SLR

vs. )

ETHICON, INC., CORDIS )  
CORPORATION, INC., and )  
JOHNSON & JOHNSON )  
INTERVENTIONAL SYSTEMS CO., )  
Defendant(s). )

----- )  
MEDTRONIC AVE, )  
Plaintiff(s), )

vs. )

CORDIS CORPORATION, INC., )  
EXPANDABLE GRAFTS PARTNERSHIP, )  
and JOHNSON & JOHNSON, )  
Defendant(s). )  
----- )

**HIGHLY CONFIDENTIAL**

DEPOSITION OF BRIAN J. BROWN  
New York, New York  
Thursday, July 29, 1999

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Reported by:  
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2 the other self-expanding stent was made out of?

3 A. Yes.

4 Q. What was that material?

5 A. In the final stages of its  
6 development, they were using elgiloy.

7 Q. I'm sorry?

8 A. Elgiloy. E-L-G-I-L-O-Y.

9 Q. Can you describe what elgiloy is for  
10 me, please?

11 A. Elgiloy -- my definition of elgiloy  
12 will be a spring steel version of stainless  
13 steel.

14 MR. HENDERSON: If I can interject  
15 here. Some of these things you are going  
16 into, the witness has already testified are  
17 not commercially commercial projects so I'm  
18 going to go back and designate it as  
19 "attorneys' eyes only" if I find that  
20 designation applies.

21 MR. TIMMONS: Attorneys' eyes only or  
22 highly confidential?

23 MR. HENDERSON: Attorneys' eyes only.

24 MR. TIMMONS: Are you talking about  
25 the outside attorneys' eyes only on pending

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2 patent applications?

3 MR. HENDERSON: Yes.

4 MR. TIMMONS: We don't have to get  
5 into that now. I don't know if that applies  
6 to anything but pending patent applications.

7 MR. HENDERSON: I'm just stating.

8 MR. TIMMONS: Do you want to put that  
9 all on highly confidential?

10 MR. HENDERSON: We did that at the  
11 beginning to save time.

12 MR. TIMMONS: I didn't hear that. I  
13 was surprised you didn't do that already.

14 We can talk during a break on the  
15 confidentiality levels, another time.

16 Q. Did the elgiloy product turn into a  
17 commercially available product?

18 A. It did not.

19 Q. Other than the ability of the hybrid  
20 stent to be balloon-expanded if the doctor so  
21 chose, were there any solely balloon-expandable  
22 stents worked on at Scimed prior to 1995?

23 MR. HENDERSON: Object to the form.

24 A. Can you reread the question to me,  
25 please?

1 Brown

2 (Record read.)

3 A. I do not know the format by which the  
4 biodegradable stent was intended to be deployed.

5 Q. Other than that, do you know of any  
6 balloon-expandable stent projects?

7 A. I do not know of any official  
8 projects.

9 Q. Did you understand why you were  
10 testing the NIR stent in late 1995?

11 MR. HENDERSON: Objection to form.

12 A. The stent was given to me as a new  
13 stent design and I was asked to evaluate it for  
14 multiple characteristics, some of which we  
15 already listed.

16 Q. Were your efforts part of a decision  
17 as to whether or not to enter into any agreements  
18 with Medinol?

19 A. I was not made aware of what influence  
20 my testing would have on any agreements with  
21 Medinol.

22 Q. Were you aware at the time you were  
23 doing the testing that there were possible  
24 agreements between either Scimed and Boston  
25 Scientific and Medinol that were being discussed?

1 Brown

2 A. I was aware that Boston Scientific was  
3 interested in the stent.

4 Q. Did you ever test any other stents  
5 that came from outside Scimed or Boston  
6 Scientific?

7 MR. HENDERSON: Objection to form.

8 A. What time period?

9 Q. Generally any time period. Let's  
10 break it up into prior to 1995 when you did this  
11 work with the NIR stent.

12 Was the NIR stent the first stent you  
13 were given and asked to test that came from  
14 outside the company?

15 MR. HENDERSON: Objection to form.

16 A. "Outside the company" meaning?

17 Q. Other than developed at Scimed.

18 A. Yes.

19 Q. What stents were those, if it is more  
20 than one?

21 A. Some of the stents that were on the  
22 market in Europe.

23 Q. Do you remember the names of those  
24 stents?

25 A. I can recall testing stents from AVE,

1 Brown

2 stents from Johnson & Johnson. Those are the  
3 only two I can recall testing. Cook.

4 Q. So, these tests were all done prior to  
5 when you tested the NIR stent?

6 A. That is my recollection.

7 Q. Do you remember the name of the AVE  
8 stent; was it the GFX or MicroStent?

9 A. I think it was a version of the  
10 MicroStent, within the MicroStent family.

11 Q. At approximately what time period did  
12 you test the AVE stent?

13 A. Somewhere between '94 and '95, in that  
14 time period.

15 Q. Was it when you were working for  
16 Scimed or was it after the joining of Scimed and  
17 Boston Scientific?

18 A. That I did what?

19 Q. That you tested the AVE stent.

20 A. I do not recall whether it was  
21 before -- excuse me. Reread the question for  
22 me, please?

23 Q. Why don't I strike it and ask you a  
24 better question?

25 A. Okay.

# **EXHIBIT**

# **B**



**COPY**

**\*\*HIGHLY CONFIDENTIAL - UNDER PROTECTIVE ORDER\*\***

UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF INDIANA

INDIANAPOLIS DIVISION

ADVANCED CARDIOVASCULAR )  
SYSTEMS INC. And GUIDANT )  
SALES CORPORATION, )

Plaintiffs, )

IP 98-1108-C-H/G

Vs. )

SCIMED LIFE SYSTEMS, INC. )  
And BOSTON SCIENTIFIC )  
CORPORATION, )

Defendants. )

-----)

July 27, 1999

3:25 p.m.

Confidential deposition of BRIAN J.

BROWN, held at the offices of Dewey

Ballantine, 1301 Avenue of the Americas, New

York, New York, pursuant to personal notice,

before Laurie A. Collins, a Registered

Professional Reporter and Notary Public of

the State of New York.

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2 THE WITNESS: I'm going to have you  
3 reread it. I missed his first couple words.

4 Q. Let me withdraw that and rephrase it.  
5 It was a little bit confusing.

6 Do you have an understanding as to how  
7 the cross-sectional dimensions of the U form  
8 compare to the horizontal member?

9 MS. JISHI: Objection to form.

10 A. I have a rough idea of the different  
11 dimensions throughout the cell structure, yes.

12 Q. Would you tell me what your  
13 understanding is?

14 A. What we're referring to as the  
15 horizontal members are approximately 4/1000 of an  
16 inch square. The U form of the cell varies  
17 throughout its form. I do not recall the max and  
18 the min dimensions.

19 Q. You mean certain portions of the U form  
20 have different dimensions than other portions of  
21 the U form?

22 A. The geometry, the dimensions within the  
23 U form do vary.

24 Q. Is one point thinner than another point?

25 A. Thinner in which direction?

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2 Q. Let me put the question this way: Is  
3 there any portion of the U form that has a smaller  
4 cross-sectional area than another portion of the U  
5 form?

6 A. Yes.

7 Q. What is the range of cross-sectional  
8 areas in the U form?

9 A. That I do not have in my head.

10 Q. Is the smallest cross-sectional area of  
11 the U form significantly smaller than the  
12 cross-sectional diameter -- the cross-sectional  
13 area of the horizontal member, which I believe you  
14 said was 4/1000?

15 MS. JISHI: Objection to form.

16 A. I would not -- I guess again I'm going  
17 to have to ask you what you mean by "significant."

18 Q. Let me ask you this question: Do you  
19 know what the smallest cross-sectional area of the  
20 U form is?

21 A. No.

22 Q. You just know that it is less than the  
23 cross-sectional area of the horizontal member?

24 MS. JISHI: Objection, misstates the  
25 testimony.

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2 A. I would have to have a print in front  
3 of me to tell you which areas are thickest and  
4 which areas are thinner.

5 Q. I would like to show you what was marked  
6 at Dr. Richter's deposition as Exhibit Number 32.  
7 I'd like to ask you whether you can tell from this  
8 document what the cross-sectional areas of the U  
9 form are.

10 A. What I can do with this document is tell  
11 you what the width is in different areas along the  
12 U form.

13 Q. Okay. But you can't tell me the  
14 thickness?

15 A. I can tell you it is my understanding  
16 that the thickness is a constant.

17 Q. A constant throughout the stent?

18 A. Correct.

19 Q. What is that thickness throughout the  
20 stent?

21 A. According to this print, it's .085  
22 millimeters.

23 Q. And the other dimension --

24 A. Excuse me. I did look at this the  
25 opposite way. According to this print, the

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2 reference thickness is .093 millimeters.

3 Q. Is that the thickness of the U form or  
4 the entire stent?

5 A. It is my understanding the entire stent  
6 is the same thickness.

7 Q. That's the .09 dimension you just read?

8 A. Correct.

9 Q. The other dimension you can tell  
10 concerning the U form is which one?

11 A. The width of the U form.

12 Q. And what dimension can you tell from the  
13 drawings?

14 A. I can tell that what you had previously  
15 referred to as the vertical legs of the U form --  
16 I'm just looking for a different drawing because  
17 this one is very fuzzy -- appears to be .084  
18 millimeters with a tolerance.

19 Q. Those are the legs. And is there any  
20 other dimension for width that's evident?

21 A. What I'll refer to as the radius out at  
22 the apex of the U form has a width of .109 with a  
23 tolerance.

24 Q. So at the very tip or the apex of the U  
25 form, the width is less than the legs; is that

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2 accurate?

3 A. No. The apex is greater than what we  
4 were referring to as the vertical legs.

5 Q. I'm sorry, what was the dimension for  
6 the vertical legs?

7 A. .084.

8 Q. .084.

9 A. Correct.

10 Q. And the apex is --

11 A. .109.

12 Q. And what is the width dimension for the  
13 horizontal member? Can you tell that?

14 A. The width of the horizontal member is  
15 .085 with a tolerance.

16 MS. JISHI: Can we just go off the  
17 record a second?

18 (Discussion off the record.)

19 Q. Do you have an understanding,  
20 Mr. Brown -- and I apologize if I asked you this  
21 question, but it's been a long day for me too.  
22 Sometimes we repeat our questions. Do you have an  
23 understanding as to why there are different widths  
24 in the vertical loop?

25 MS. JISHI: Objection to form.

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2 Q. I'm sorry, what did you call the  
3 vertical form? Is that what you called it,  
4 Mr. Brown?

5 A. It has been called the vertical member,  
6 it has been called a U form. But I understand what  
7 your question is. I understand what you're  
8 referring to, but I don't remember what the  
9 question was.

10 Q. Do you have an understanding as to why  
11 there are different widths in the vertical form, U  
12 form?

13 A. I was not involved with selecting those  
14 widths.

15 Q. Do you know if the different widths  
16 provide a benefit, some sort of benefit, in terms  
17 of the performance characteristic of the NIR stent?

18 A. It is my understanding that there is a  
19 benefit.

20 Q. And what is the benefit?

21 A. I can speculate again. I have heard  
22 that it helps distribute stresses throughout that  
23 region.

24 Q. And how does it distribute stresses?

25 A. If you have a region of high stress, you

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2 typically want to add additional material into that  
3 region to help carry that load.

4 Q. Where is the region of heavy stress?

5 A. That you would have to speak to Kobi on.

6 Q. Is the stress in the vertical U form or  
7 is it in the horizontal member?

8 A. I do not know.

9 Q. Has Boston Scientific ever performed  
10 finite element analysis on the NIR stent?

11 A. It is my understanding that they have.

12 Q. Have you ever seen the results of that?

13 A. I have seen results pass by me, but I've  
14 never analyzed them.

15 Q. Do you understand finite element  
16 analysis?

17 A. I understand the fundamentals of it.

18 Q. And would finite element analysis  
19 indicate on a NIR stent where those stresses are  
20 located?

21 A. Finite element analysis, if done  
22 correctly, will give you guidance on where those  
23 stresses are located.

24 Q. Do you know who at Boston Scientific  
25 performed the finite element analysis?



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2 A. I know the department that performed  
3 finite element analysis.

4 Q. And which department performed it?

5 A. It would be Greg Olson's department.

6 MS. JISHI: Can I just correct something  
7 in the record? I believe you referred to  
8 this document as Richter Exhibit 32. This  
9 is Richter Exhibit 49. That's what I wrote  
10 down. I just want to make sure it's clear.

11 MR. BADKE: Just to make sure we are  
12 clear, the engineering drawings that  
13 Mr. Brown was looking at when answering my  
14 questions about the various cross-sectional  
15 diameters was Richter Exhibit 49.

16 Q. Correct, Mr. Brown?

17 A. That is correct.

18 Q. Is there anyplace at Boston Scientific  
19 where you maintain photographs of the NIR stent?

20 A. There is not a central location.

21 Q. Are you aware of any photographs at  
22 Boston Scientific of the NIR stent?

23 A. I would assume there are numerous.

24 Q. I'm sorry?

25 A. I would assume there are numerous

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2 photos.

3 Q. Including the SEM photographs?

4 A. It's strictly speculative, whether  
5 they're there or not. The ones you referred to  
6 earlier are the ones you asked for earlier.

7 Q. Over time you have seen a number of  
8 photographs of the NIR stent taken by Boston  
9 Scientific?

10 A. Yeah.

11 MR. BADKE: I ask the reporter to mark  
12 as Exhibit Number 138 a document bearing  
13 Bates numbers BSC 077097 through 077108.  
14 It's a memorandum dated March 17th, 1998,  
15 regarding competitive stent testing.  
16 Mr. Brown was listed as a copy recipient.

17 (Brown Exhibit 138, document dated  
18 3/17/98 received by Brown, Bates stamped BSC  
19 077097 through 077108, marked for  
20 identification, as of this date.)

21 Q. Do you recall that memo, Mr. Brown?

22 A. Yes, I do.

23 Q. Look at page 077100. Does this page set  
24 forth the results of measurements on foreshortening  
25 of the various stents listed there?

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2 A. Set forth means --

3 Q. Does it set forth the results of testing  
4 or measurements on foreshortening?

5 A. Is this document the results that the  
6 team measured? Yes.

7 Q. Is there anything inaccurate, from what  
8 you can see, about that data that's set forth on  
9 the page?

10 A. I can say that -- I cannot comment on  
11 the accuracy of this data.

12 Q. You were not involved in this tests  
13 directly?

14 A. Not directly.

15 Q. They were performed by Mr. Madison and  
16 Mr. Skubitz and Mr. Vrba?

17 A. Correct.

18 Q. Can you tell me what peak force and  
19 track test on page 77102 means?

20 A. Without having the protocol in front of  
21 me, I can only -- I can't speculate on what this  
22 test is. But a guess on what they're doing is  
23 measuring the amount of force it takes to track a  
24 stamp delivery system as opened up out of the  
25 package down through an in vitro anatomical model.

# **EXHIBIT**

## **C**

1 UNITED STATES DISTRICT COURT  
2 FOR THE DISTRICT OF DELAWARE  
3

4 -----  
5 SCIMED LIFE SYSTEMS, INC.,  
6 BOSTON SCIENTIFIC SCIMED, INC.,  
7 BOSTON SCIENTIFIC CORPORATION,  
8 and MEDINOL, LTD.,

9 Plaintiffs,

10 vs.

Civil Action No.  
99-904 (consolidated)

11 JOHNSON & JOHNSON,  
12 CORDIS CORPORATION,  
13 and JOHNSON & JOHNSON  
14 INTERVENTIONAL SYSTEMS, INC.,

**CONFIDENTIAL**

15 Defendants.  
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**COPY**

26 The deposition of BRIAN BROWN, taken pursuant  
27 to Notice of Taking Deposition, taken before Sheila D.  
28 Fearing, RPR, a Notary Public in and for the County of  
29 Hennepin, State of Minnesota, taken on the 30th day of  
30 January, 2001, at 220 South Sixth Street, Minneapolis,  
31 Minnesota commencing at approximately 9:30 a.m.

1 Q. I'm going to attach together all of the  
2 pictures that we took from the various angles of the  
3 Spectralytics stent.

4 (At this time Brown Deposition Exhibit  
5 No. 10 was marked for identification by  
6 the Court Reporter.)

7 BY MR. CHANG:

8 Q. Exhibit 10 bears production numbers BSC 66948  
9 to 66951. The order of the pages is slightly out of order,  
10 but all of the pages are there. Is this the stent that  
11 Spectralytics cut for you in the summer of 1994?

12 MR. RINGEL: We have the date. Your  
13 characterization of it as the summer of 1994 I think  
14 mischaracterizes the testimony.

15 MR. CHANG: I just don't know when they  
16 cut it.

17 MR. RINGEL: Okay.

18 A. This appears to be the stent that Spectralytics  
19 cut per the purchase order that I had written for them to do  
20 the cutting of the stent.

21 BY MR. CHANG:

22 Q. If you look at BSC 246239 in Brown Exhibit 9,  
23 is that the purchase order or the purchase requisition  
24 you're talking about?

25 A. That is correct.

1 Q. And does it state when you received the stent  
2 samples?

3 A. It does.

4 Q. Is that your handwriting?

5 A. If you're referring to in the comment section  
6 where it says, "Received three on May 20, 1994," yes, that  
7 is my writing.

8 Q. Do you recall when you asked for these stent  
9 samples to be completed by?

10 A. The purchase order was written out requesting  
11 them to be completed by May 18.

12 Q. And do you recall if you were in contact with  
13 them between May 18 and May 20?

14 A. I can only assume that I was.

15 Q. Do you recall if they had difficulty filling  
16 the purchase order?

17 A. They had difficulty fabricating the stents.

18 Q. And what kind of difficulties did they have  
19 fabricating the stents?

20 A. That I'm unfamiliar with.

21 Q. Do you recall if they told you why they were  
22 unable to make the stents by May 18?

23 A. The May 18 date was a date that I requested the  
24 stents to be done by. The date that they are promised to be  
25 completed by is May 27. Now, were they going to have

1 difficulty hitting May 27? I do not know.

2 Q. Did you ask them to send you the three stents  
3 before the due date?

4 A. I asked them if I could pick up the three  
5 stents before the due date.

6 Q. Why?

7 A. I was anxious to see how they performed.

8 Q. Was there any particular reason why you were  
9 anxious to see the performance?

10 A. This was my full-time job to develop a new  
11 stent platform. I did not want to wait another week.

12 Q. What was your evaluation of how these stents  
13 performed?

14 A. I guess I can not recite off the top of my head  
15 all of my thoughts and evaluations of the stent. I can  
16 share with you some of the things I do remember.

17 Q. Okay.

18 A. I remember that the stent was not as flexible  
19 as I had hoped that it would be. And I remember that the U  
20 segments had a curvature to them that would extend down into  
21 the flow lumen, therefore, causing -- or potentially causing  
22 a flow disturbance once implanted in the body.

23 Q. You're saying in pre-deployment form it had  
24 protrusions?

25 A. No, post-deployment.



1 Q. Did you actually deploy the stent?

2 A. I did expand a stent to evaluate its  
3 characteristics.

4 Q. How did you expand -- you received three?

5 A. Correct.

6 Q. And you expanded one of them?

7 A. For sure one.

8 Q. Do you recall expanding two of them?

9 A. I do not recall whether I did or did not expand  
10 two.

11 Q. How did you expand the stent samples?

12 A. Placed it on a balloon and inflated the  
13 balloon.

14 Q. What kind of balloon did you put it on?

15 A. A Scimed balloon.

16 Q. Do you recall if it was compliant or  
17 noncompliant?

18 A. I do not recall.

19 Q. And you expanded this in air?

20 A. Correct.

21 Q. Do you recall making any measurements of the  
22 expanded sample?

23 A. I do not recall making any official  
24 measurements that are documented. I assessed the  
25 performance in a very nonformal fashion as far as my own

1 personal evaluation of it.

2 Q. Did you test the stent samples in any other  
3 way?

4 A. None that I recall.

5 Q. How did you test the flexibility of the stent  
6 samples?

7 A. I can only guess that I held the device and  
8 attempted to flex it using my fingers.

9 Q. Did you compare it to any other stents,  
10 commercial or otherwise?

11 A. I do not recall doing a direct comparison to  
12 other stents. I would have compared it to my knowledge of  
13 stents that I had played with. And I do not recall which  
14 ones I had or had not played with. And also comparing it to  
15 what my expectations are or were for a stent's flexibility.

16 Q. Are you aware that Nitinol stents are more  
17 flexible than stainless steel stents?

18 A. Nitinol, the material is a softer material than  
19 stainless steel. To say that a Nitinol stent is more  
20 flexible than a stainless steel stent is an improper use of  
21 the term.

22 Q. I apologize. If the same stent were cut in  
23 Nitinol, would you expect that it would feel more flexible?

24 A. It would feel more flexible as far as the force  
25 that it takes to bend it. But it's a deceiving effect on

1 the person who is feeling it, because with a Nitinol stent,  
2 once you flex it, it springs right back to its original  
3 straight shape, versus a stainless steel stent, once you  
4 flex it, it stays there. And so the feeling to the person  
5 who is deforming it is that sometimes a stainless steel one  
6 is softer because once they bend it, it stays. Therefore,  
7 there is no force to hold it in a bent shape. Whereas with  
8 a Nitinol one, they're always having to hold it and maintain  
9 a force to it, so sometimes they feel like they're harder to  
10 deflect.

11 Q. Would you expect that a Nitinol stent with the  
12 same dimensions would take less force to bend than the same  
13 stainless steel stent?

14 A. Yes.

15 Q. Did you consider cutting the design of  
16 figure 14 in Nitinol?

17 A. Considered it initially, but ruled it out based  
18 on the level of difficulty that Spectralytics had with  
19 cutting stainless steel. Nitinol is much more difficult to  
20 cut than stainless steel. And also in my ability to get  
21 Nitinol tubes versus stainless steel tubes.

22 Q. Do you specifically recall Spectralytics  
23 telling you that they had difficulty cutting the pattern of  
24 figure 14?

25 A. I do not recall whether they used the term that

1 they were having difficulty, but they were not able to make  
2 all ten stents in one run. Their first attempt at making it  
3 only produced three good stents.

4 Q. Do you recall thinking at the time that it  
5 would be difficult to cut this design -- difficult or  
6 impossible to cut this design in Nitinol?

7 A. I made the assumption that it would be  
8 difficult for Spectralytics to cut this design out of  
9 Nitinol.

10 Q. Did anyone else test any of these stent samples  
11 from Spectralytics?

12 A. I do not recall of anyone else testing them.

13 Q. Did you consider using another vendor to cut  
14 the pattern of figure 14 in Nitinol?

15 A. I did not, because I had ruled out the value of  
16 that pattern to meet my objectives.

17 Q. Did you show anybody the expanded stent sample?

18 A. I can only assume that I did. I can not give  
19 you names.

20 Q. Give me your best guess as to who you would  
21 have shown it to.

22 MR. RINGEL: Well, I object to that  
23 question, advise the witness to limit his testimony to his  
24 recollection and not to give guesses.

25 MR. CHANG: Well, I think --

1 MR. RINGEL: I don't think it's a fair  
2 question. I think he just said he doesn't know.

3 MR. CHANG: I know. But I would just  
4 like to know who within the realm of possibility might have,  
5 because then we can ask them if they recall seeing it.

6 BY MR. CHANG:

7 Q. If you can answer.

8 A. The two names I can think of is Chuck Euteneuer  
9 and Mike Davis.

10 Q. Who is Mike Davis?

11 A. He was my technician.

12 Q. Is he still with Scimed?

13 A. He is.

14 Q. Do you recall writing down anywhere your  
15 conclusions with respect to figure 14?

16 A. I do not, at that time.

17 Q. You said that one of the reasons that --  
18 correct me if I'm wrong. You mentioned two reasons why you  
19 thought the samples were not good. One was that they  
20 weren't as flexible as you had hoped, and two was the fact  
21 that in the expanded sample the U's dipped into the lumen,  
22 is that correct?

23 A. Correct.

24 Q. Do you recall if the stainless steel tube that  
25 you provided to Spectralytics was annealed?

1 A. I have no way of knowing.

2 Q. Would that in your estimation change how much  
3 the U's dipped into the lumen?

4 A. My engineering judgment would tell me that the  
5 difference between annealed and unannealed stainless steel  
6 would have very marginal effects on the U's.

7 Q. What about for Nitinol, when you have a  
8 self-expanding stent, would it still be a concern that in  
9 expanded form the U's would dip into the lumen?

10 A. If that was the shape in which they were heat  
11 set, yes.

12 Q. Could you, in fact, heat set the Nitinol such  
13 that that was not the shape?

14 A. Yes, I could heat set them to be in a flatter  
15 configuration which then becomes an issue when I compress  
16 them down and try to place them on a delivery system. Now  
17 the U's would be sticking out instead of sticking in during  
18 when it's expanded.

19 Q. Did you consider doing that at the time?

20 A. I did not. I did not see a need to go down  
21 that path because both scenarios were unfavorable to me.

22 Q. Did you consider -- I believe you testified  
23 earlier that you did not consider shortening the U's at that  
24 time, is that correct?

25 A. That is correct.

1 Q. Did you understand that shortening the U's  
2 would reduce that problem?

3 A. I did understand that, but it also compounds  
4 the lack of flexibility.

5 Q. I'd like you to look at BSC 246224. Do you  
6 recall if this design is representative of the designs you  
7 were having other vendors cut in the summer of 1994?

8 A. It would be representative of designs that I  
9 was asking vendors to cut. Whether they cut this exact one  
10 here, I would have to find a purchase order to tell me  
11 whether or not that was the case.

12 Q. Let he will go back for a second. Do you  
13 recall ever discussing with anyone the fact that you found  
14 figure 14 -- the figure 14 design to be undesirable because  
15 of these U's dipping into the lumen in 1994?

16 A. Only if what we talked about earlier is true  
17 and I did review the design with Mr. Euteneuer or Mr. Davis.

18 Q. But you don't recall actually reviewing the  
19 design with either of them?

20 A. I do not recall the conversation with them. I  
21 would expect that I would have provided feedback to Chuck on  
22 his initial design concept that he provided to me.

23 Q. I'd like you to look at BSC 246217. It says  
24 here, "Attached is a sketch showing a very simple pattern  
25 that we've given to vendors to evaluate." It's the second

1 I can not tell, but the information is from that time  
2 period.

3 Q. Okay. Do you believe this was from before you  
4 received the Spectralytics stent or after?

5 A. No way of knowing.

6 Q. It appears that the design of figure 11 is in  
7 this presentation but the design of figure 14 is not. Do  
8 you know why that would be?

9 A. I do not.

10 Q. Did there come a point in time when you  
11 considered the design of figure 14 not to be viable, but  
12 still considered the design of figure 11 to be viable?

13 A. Not to my knowledge.

14 Q. If the documents before and after this section  
15 came from your binder, do you have any reason to believe  
16 that these documents in Exhibit 12 and Exhibit 13 did not?

17 MR. RINGEL: Objection. Hypothetical.  
18 Calls for speculation.

19 A. I have no way of knowing.

20 MR. CHANG: Counsel, I'd like -- I'm  
21 going to request a representation by Boston Scientific of  
22 what Bates numbers of documents actually came from his  
23 files. The witness doesn't remember. And the way these  
24 documents were produced it's not surprising that he can't  
25 recognize them. So I'd like to have some way of knowing for



1 sure what came from his files.

2 MR. RINGEL: We'll look into it.

3 BY MR. CHANG:

4 Q. Are you looking at anything in particular?

5 A. No. Just looking at documents here.

6 MR. RINGEL: That will teach you.

7 BY MR. CHANG:

8 Q. You were involved in evaluating the NIR stent  
9 in November of 1995, is that correct?

10 A. I was involved with evaluating the NIR stent in  
11 late 1995. I do not recall the exact month.

12 Q. While you were cutting these prototypes for the  
13 hybrid stent project, did you cut any prototypes from a flat  
14 sheet and then roll and weld them?

15 A. We did make stents from flat sheet. We did  
16 attempt to roll and weld them. I do not recall if we were  
17 ever very successful at it.

18 Q. Did you ever consider etching, rolling and  
19 welding the design of figure 14?

20 A. Not that I recall.

21 Q. When you were evaluating the NIR stent, were  
22 you surprised to learn that the U's protruded?

23 MR. RINGEL: Objection. Lack of  
24 foundation.

25 BY MR. CHANG:

1 Q. Do you understand --

2 A. No, I don't understand your question.

3 Q. Do you know if the U's of the NIR stent  
4 protruded from the cylindrical envelope?

5 MR. RINGEL: Objection. Lack of  
6 foundation.

7 A. Do I know -- I have seen NIR stents where there  
8 is -- where the U's are on a different plane or in a  
9 different cylindrical envelope than the rest of the stent.

10 BY MR. CHANG:

11 Q. When you were evaluating the NIR stent in late  
12 1995 did you see that as a drawback of the NIR stent?

13 A. I do not recall whether I saw that in late 1995  
14 or not. When I have seen that I have not viewed it as a  
15 drawback because it's so minor.

16 Q. When you were evaluating the NIR stent in late  
17 1995, were you concerned that the U's might protrude into  
18 the lumen?

19 A. I do not recall whether we had that concern or  
20 not in late 1995. We evaluated the stent. And in our  
21 evaluation we did not find anything that led us to believe  
22 that there was an issue with the U design.

23 Q. At that time did you recall your prior  
24 experience with the Spectralytics sample?

25 A. I can only guess, yes, because I don't have any

1 documentation to support it.

2 Q. Knowing about the Spectralytics sample and the  
3 problems you had with it, why were you not concerned about  
4 the U's in the U design?

5 A. Because they were considerably different in  
6 design.

7 Q. And is it principally because they were shorter  
8 in height?

9 A. They were shorter in height. They were thinner  
10 in width. They actually have a variable dimension to them  
11 to help facilitate flexibility. There are more of them.  
12 They are joining every strut pair.

13 Q. The variability and width, is that similar to  
14 the variability and width that you designed into the  
15 Spectralytics sample, that it was thicker at the apex and  
16 thinner on the sides?

17 A. If I recall correctly, the design is that way.  
18 I can not comment on the reasons why.

19 Q. In May of 1994 do you recall if you considered  
20 thinning the U's and making them shorter?

21 MR. RINGEL: Objection. Asked and  
22 answered.

23 BY MR. CHANG:

24 Q. I apologize. I don't remember what the  
25 previous answer was. If you did answer that already, just

1 give me the same answer. I won't try to argue that these  
2 are inconsistent answers.

3 MR. RINGEL: I also object that it's  
4 compound.

5 MR. CHANG: All right. I'll take it one  
6 at a time.

7 BY MR. CHANG:

8 Q. At the time in -- after you received the  
9 Spectralytics sample, did you consider modifying the design  
10 of figure 14 at all?

11 A. Yes.

12 Q. What design modifications did you consider?

13 A. Considered shortening the U's or thinning the  
14 struts. But both of them were not feasible solutions to  
15 making it more flexible.

16 Q. I thought the problem you were concerned about  
17 was the U's sticking into the lumen?

18 MR. RINGEL: Objection. Mischaracterizes  
19 the testimony.

20 A. And increasing flexibility.

21 BY MR. CHANG:

22 Q. Okay. Were those feasible solutions to  
23 reducing protrusion into the lumen in expanded form?

24 A. I don't understand the question.

25 Q. There is two things you mentioned, shortening

1 the U's and thinning them out. Were those both feasible  
2 solutions to solving the problem of these U's protruding  
3 into the lumen in expanded form?

4 A. The shortening of the struts would be a  
5 potential solution. The thinning of them, I don't know if  
6 it would have any effect on that.

7 Q. And why do you believe that those two factors  
8 were not feasible with respect to flexibility?

9 A. The shorter you make the U's, the stiffer they  
10 become. Therefore, I am not addressing the need for  
11 flexibility. And making the struts thinner still leaves me  
12 with the U's protruding into the inter-lumen, because I  
13 would want to maintain the length to improve flexibility.

14 Q. Let me see if I understand you correctly. At  
15 the time you received the Spectralytics sample you actually  
16 considered making both of these adjustments?

17 A. Briefly, yes.

18 Q. Did you write this down anywhere?

19 A. No.

20 Q. Did you consider them one at a time or did you  
21 consider them together?

22 A. I don't recall.

23 Q. Did you realize at the time that if you thinned  
24 the struts and shortened the U's, that you would -- you  
25 could solve the problem of the U's protruding into the lumen

1 in expanded form?

2 A. I recognized that if I shortened the struts, I  
3 could reduce the U's protruding into the lumen, but I would  
4 then lose my flexibility. Therefore, that was not an  
5 option.

6 Q. Would shortening the U's and thinning the  
7 struts create a more flexible stent than the design that you  
8 are submitting to vendors at around the same time?

9 MR. RINGEL: Objection. Calls for  
10 speculation. And also vagueness as to what's meant by the  
11 design that was being submitted to vendors.

12 BY MR. CHANG:

13 Q. Would shortening the U and thinning the struts  
14 create a more flexible design than the design pictured on  
15 BSC 246224?

16 A. Exhibit?

17 Q. Exhibit 9. We can actually take a look at the  
18 front page of Exhibit 13. I think the design is almost  
19 identical.

20 MR. RINGEL: Objection. That calls for  
21 speculation.

22 A. I do not know whether the changes that you've  
23 mentioned would make a more flexible design than what is  
24 shown here on the first page of Exhibit No. 13. Exhibit  
25 No. 13 was never viewed as being a flexible design. But as

1 we ventured down the path of a self-expanding stent, we knew  
2 that U's were not the type of design we wanted to  
3 incorporate.

4 BY MR. CHANG:

5 Q. Let me just clear something up before we go  
6 into that. At that time in May, June of 1994, would you  
7 have known that shortening the U and thinning the struts on  
8 the figure -- sorry. Let me start over. At that time in  
9 May or June of 1994 would you have known that a U connector  
10 that you made shorter and with thinner struts than that  
11 shown in figure 14 would be more flexible than a straight  
12 connector such as that used in -- on the first page of  
13 Exhibit 13?

14 A. The U connectors that were present on figure 14  
15 were not flexible. By shortening those U's and making them  
16 thinner, if I did those in a one-to-one relationship to each  
17 other, I would gain zero flexibility.

18 Q. I thought we had already established that the U  
19 connector as shown in figure 14 itself would be -- although  
20 you considered it inflexible, would be more flexible than a  
21 straight connector?

22 A. That is correct. But it is not what we want  
23 for a self-expanding stent.

24 Q. That's actually a different question. All I'm  
25 asking is, if you take the connector in figure 14, you

1 shorten it and you thin the struts, would you have known  
2 that strut to be more flexible than a straight connector in  
3 May or June of 1994?

4 A. Yes.

5 MR. CHANG: Let me take a short break and  
6 then I'll see where we go from here.

7 MR. RINGEL: Okay.

8 (At this time a brief recess was taken.)

9 BY MR. CHANG:

10 Q. You mentioned earlier that you were the  
11 principal scientific contact with Oliver Arrett for the 320  
12 patent application, is that correct?

13 A. I said something similar to that, yes.

14 Q. All right. Was this true during the entire  
15 pendency of the 320 patent application?

16 A. It was and still is.

17 Q. Did there come a time when Scimed decided to  
18 abandon the 320 patent application?

19 A. Not that I'm aware of.

20 Q. Do you believe it was a mistake that the  
21 application went abandoned?

22 A. I'm sorry?

23 Q. Going back to Exhibit 1, there is notice of  
24 abandonment of the patent application 320 at the end.

25 A. I understand what you're asking. I don't know



1 Q. Okay. Do you recall having any equipment to  
2 test the flexibility of these stent samples?

3 A. I do not recall if we had equipment at that  
4 time.

5 Q. Do you recall how you tested the  
6 compressibility of the samples?

7 A. I do not.

8 Q. And you also don't recall if you wrote the  
9 results of this testing down anywhere?

10 A. That is correct.

11 Q. It says here that you expanded two of the three  
12 samples received. Does that refresh your recollection as to  
13 how many you expanded?

14 A. Yes, it does.

15 Q. Do you still have those expanded stents  
16 somewhere?

17 A. I do not.

18 Q. Have you looked for them?

19 A. I have.

20 Q. Do you have any of the other stent samples that  
21 other vendors etched for you, for example, samples  
22 corresponding to the pattern shown on the front of Brown  
23 Exhibit 13?

24 A. Potentially.

25 MR. CHANG: I'd like to request that

1 those samples be produced.

2 MR. RINGEL: All right. If they exist.  
3 We'll take a look. We'll take your request under  
4 advisement.

5 MR. CHANG: Okay.

6 BY MR. CHANG:

7 Q. Did you test any of those samples?

8 A. If we ever actually fabricated that particular  
9 stent, again, I can only assume that we tested them.

10 Q. When you received stent samples from the  
11 various vendors, how did you typically test them?

12 A. It depends on the time frame, meaning, was it  
13 the early stages of our stent development or the ladder  
14 stages of our stent development.

15 Q. In 1994.

16 A. Again it varied because we were just starting  
17 to develop stents, and so at the very beginning we did not  
18 have any test methods. As the year progressed we developed  
19 more and more.

20 Q. Did you typically expand the stent samples that  
21 you received on a balloon?

22 A. It depends. If it was a stainless steel  
23 balloon expandable stent, yes. If it was a self-expanding  
24 Nitinol stent, no.

25 Q. It says here on the next sentence, "Based on my

1 examination, as well as the consideration of the design by  
2 myself and others, we decided that the design did not have  
3 the flexibility and expansion characteristics that we wanted  
4 for our dual expansion stent project." Do you recall any  
5 others reviewing these stent samples?

6 A. Just the ones I previously mentioned.

7 Q. But you don't specifically recall those people  
8 reviewing the stent samples?

9 A. Just as I stated earlier, the two individuals.

10 Q. I guess my understanding of your prior  
11 testimony is that you don't remember anybody else reviewing  
12 the stent samples, but your best guess was Chuck Euteneuer  
13 and Matt --

14 A. Mike Davis.

15 Q. Mike Davis might have?

16 A. That is correct.

17 Q. Is your memory any different now?

18 A. It's still the same.

19 Q. When you say expansion characteristics, what  
20 are you talking about?

21 A. The characteristics of the stent once it is  
22 expanded such as the ability to provide scaffolding, the  
23 flexibility, the smoothness of it for -- in case there is  
24 any flow disturbance.

25 Q. When you say you decided that it didn't have

1 the expansion characteristics that you wanted, were you  
2 talking specifically about the protrusion of the U's into  
3 the lumen when expanded?

4 A. That is the primary thing, yes, is that the U's  
5 were protruding into the flow lumen. Also, once that  
6 occurs, they are no longer in contact with the vessel in  
7 that region, therefore, reducing scaffolding properties.  
8 And also the stent was not flexible.

9 Q. Are there any other characteristics that you  
10 recall that you were unhappy with?

11 A. None that I recall.

12 Q. Did you order any of the other stent designs  
13 shown in the 320 patent application to be cut by any  
14 vendors?

15 A. I'm going to have to pull the application back  
16 out to take a look.

17 Q. Sure. It's tab 3.

18 A. Thank you. We may have made a figure 6.

19 Q. Any others?

20 A. We made figure 10. And then I'll say some  
21 simple versions of figure 8.

22 Q. And each of these was using the hybrid  
23 material?

24 A. Not always.

25 Q. For the figure 6 design, was that a hybrid

1 sample?

2 A. We attempted to make a figure 6 out of hybrid,  
3 yes.

4 Q. Do you recall whether you were satisfied with  
5 the performance?

6 A. I do not recall.

7 Q. Did you make any others after that particular  
8 sample that you remember?

9 A. Not that I recall.

10 Q. The simplified form figure 8, was that a hybrid  
11 sample?

12 A. Possibly.

13 Q. Do you recall only one sample for figure 8?

14 A. I recall attempting to make figure 8. I don't  
15 recall whether we were ever successful.

16 Q. Do you recall what your conclusions were about  
17 that stent sample?

18 A. I do not.

19 Q. Is it likely that you were satisfied with its  
20 performance?

21 A. No.

22 Q. Figure 10, was that a hybrid stent?

23 A. I do not recall if we ever made figure 10 into  
24 a hybrid stent.

25 Q. What material do you recall cutting the figure

1 10 stent out of?

2 A. We made stents similar to figure 10 out of  
3 stainless steel.

4 Q. Were you satisfied with the performance of  
5 those stents?

6 A. To my knowledge, no.

7 Q. What did you believe were the weaknesses of  
8 that design of those stents?

9 A. It is a stiff design, lacks flexibility.

10 Q. Did you make the design of figures 10A, 10B or  
11 figures 10C, 10D?

12 A. I do not recall.

13 Q. Is there only one sample that you recall?

14 A. To my knowledge there were multiple samples.

15 Q. All in stainless steel?

16 A. To my knowledge, yes. I do not recall if we  
17 made any out of Nitinol.

18 Q. And you don't recall whether any of them or all  
19 of them were 10A, 10B or figures 10C, 10D?

20 A. That is correct.

21 Q. Did you ever implant any of these designs in  
22 animals or humans?

23 A. Not that I'm aware of.

24 Q. Did you cut these stents in 1994?

25 A. The figure 6 is not cut, but braided. Figure